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Microchip Expands dsPIC® DSCs for Appliance, Automotive and Industrial Applications

dsPIC33EP512GM710 Family of Digital Signal Controllers Enable Dual Motor Control, Dual CAN Communication and Advanced Sensor Interfaces

CHANDLER, Ariz.--(BUSINESS WIRE)-- Microchip Technology Inc. (NASDAQ: MCHP), a leading provider of microcontroller, mixed-signal, analog and Flash-IP solutions, today announced a new family of dsPIC33 **Digital Signal Controllers** (DSCs) — the **dsPIC33EP512GM710** family. This is an expansion of Microchip's dsPIC® DSC portfolio that adds higher levels of integration for motor control applications. The new family of DSCs enables efficient dual motor control with 12 motor control PWM channels (6 pairs), dual 12-bit ADCs, multiple 32-bit Quadrature Encoder Interfaces, and two CAN modules. With this level of integration, the dsPIC33EP512GM710 family can independently control two motors with a single microcontroller (MCU) for optimized system costs. This family can also serve as a communication hub for automotive or industrial applications to connect with multiple CAN busses.

This family expands the existing dsPIC33EP families by supporting 512 KB Flash, 48 KB RAM, and four operational amplifiers (op amps). Other features of this family include enhanced analog functionality with two independent ADC modules, configurable as 10-bit 1.1 Msps with four sample and holds or 12-bit, 500ksps with one sample and hold, supporting up to 49 channels. This analog integration enables advanced sensor applications that require multiple precision ADCs with several sample and holds as well the processing power of a DSP. The dsPIC33EP512GM710 family also includes a Peripheral Trigger Generator (PTG) for scheduling complex, high-speed peripheral operations which saves software cycles and reduces firmware complexity. The dsPIC33EP512GM710 devices enable more efficient, less expensive designs in the appliance (e.g., air conditioners, washing machines, dishwashers, refrigerators); automotive (e.g., cooling fans, fuel pumps, water pumps, sensors); and industrial markets (e.g., embroidery machines, lathes, printers), among others.

"The GM710 family features 6 PWM pairs to efficiently control two BLDC or PMSM 3-phase motors in applications such as air conditioners or washing machines," said Joe Thomsen, director of Microchip's MCU16 Division. "Also, this family has the features to serve as a CAN communication bridge for systems with multiple CAN busses or interface for advanced sensors by utilizing the integrated precision analog."

Development Support

The dsPIC33EP512GM710 family is supported by Microchip's **dsPICDEM MCLV-2 Development Board** (part # DM330021-2), **dsPICDEM MCHV-2 Development System** (part # DM330023-2) with the new **dsPIC33EP512GM706 Single Motor Internal Op Amp**

PIM (part # MA330033). For non-motor control applications, a new **dsPIC33EP512GM710 General Purpose PIM** (part # MA330035) is offered for Microchip's **Explorer 16 Development Board** (part # DM240001).

Pricing & Availability

The new dsPIC33EP512GM710 MCU family is available today for sampling and volume production, starting at $2.63 each in volume. Details on each product variant can be found in the **datasheet**.

Products with integrated dual CAN: For 44-pin TQFP and QFN packages, there are options with 128 KB Flash (dsPIC33EP128GM604), 256 KB Flash (dsPIC33EP256GM604) and 512 KB Flash (dsPIC33EP512GM604). For 64-pin TQFP and QFN packages, there are options with 128 KB Flash (dsPIC33EP128GM706), 256 KB Flash (dsPIC33EP256GM706), 512 KB Flash (dsPIC33EP512GM706). For 100-pin TQFP and BGA packages, there are options with 128 KB Flash (dsPIC33EP128GM710), 256 KB Flash (dsPIC33EP256GM710) and 512 KB Flash (dsPIC33EP512GM710).

Products without CAN: For 44-pin TQFP and QFN packages, there are options with 128 KB Flash (dsPIC33EP128GM304), 256 KB Flash (dsPIC33EP256GM304) and 512 KB Flash (dsPIC33EP512GM304). For 64-pin TQFP and QFN packages, there are options with 128 KB Flash (dsPIC33EP128GM306), 256 KB Flash (dsPIC33EP256GM306), 512 KB Flash (dsPIC33EP512GM306). For 64-pin TQFP and QFN packages, there are options with 128 KB Flash (dsPIC33EP128GM310), 256 KB Flash (dsPIC33EP256GM310) and 512 KB Flash (dsPIC33EP512GM310).

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Resources

High-res Images Available Through Flickr or Editorial Contact (feel free to publish):

- Chip Graphic: **http://www.microchip.com/get/XQ52**
- Block Diagram: **http://www.microchip.com/get/53GT**
- Single Motor Internal Op Amp PIM: **http://www.microchip.com/get/X50U**
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